

Journées Thématiques

Two-day workshop on

**Apprentissage
et
Parcimonie**

**Sparse Models
and
Machine Learning**

**Organisées par le
Département Signal, Image & Robotique
de l'IRISA**

**En partenariat avec
EURASIP, INRIA et ORANGE LABS**

**Organised by the
Signal, Image & Robotics Department
of IRISA**

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***15-16 Octobre 2012
IRISA, Campus de Beaulieu, Rennes***

Sparse representations and models have become a central concept in the field of signal processing and data modeling and are gradually building bridges with the area of machine learning. In parallel, these concepts are becoming operative in a number of applicative fields, such as brain imaging, distributed communications, multimedia, etc...

This two-day workshop is intended to offer an overview of the current status of this stimulating field and to discuss very exciting focal points, where sparse representations, machine learning and applications are converging to new fundamental and practical paradigms.

The two days are articulated around 4 tutorial talks, 3 applicative focus and 2 open discussions (see the complete program below) presented by colleagues currently at the forefront of the field. The workshop is opened to academy and industry specialists, but also to PhD students, post-doc and colleagues from neighboring domains, who want to deepen their understanding of the field and its current theoretical and practical challenges.

Registration is free of charge but mandatory. To register send an email to stephanie.lemma@irisa.fr and frederic.bimbot@irisa.fr

Scientific organizing committee: Frédéric Bimbot, Rémi Gribonval, Cédric Herzet, Aline Roumy.

Journées Thématiques "Apprentissage et Parcimonie"

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PROGRAMME

Mon 15 Oct

10h30	Welcome and introduction	<i>Frédéric Bimbot</i>	
10h45-12h15	Tutorial 1	<i>Rémi Gribonval</i> ¹	Inverse problems and sparse models (1/2)
12h15-14h00	<i>Lunch</i>		
14h00-15h30	Tutorial 2	<i>Francis Bach</i> ²	Structured sparsity and convex optimization (1/2)
15h30-15h45	<i>Coffee Break</i>		
15h45-16h45	Applications (warm up)	<i>Pierre Vandergheynst</i> ³	Emerging applications of sparse representations
16h45-17h30	Open discussion 1	<i>Lead by P. Vandergheynst</i>	What can be expected from sparse models in addressing new applicative problems
17h30-18h30	<i>Cocktail</i>		

Tue 16 Oct

9h00-10h30	Tutorial 3	<i>Rémi Gribonval</i> ¹	Inverse problems and sparse models (2/2)
10h30-10h45	<i>Coffee break</i>		
10h45-11h45	Applicative focus 1	<i>Enrico Magli</i> ⁴	Compressed sensing for distributed communications
11h45-12h45	Applicative focus 2	<i>Alexandre Gramfort</i> ⁵	Sparse methods for brain imaging
12h45-14h00	<i>Lunch</i>		
14h00-15h30	Tutorial 4	<i>Francis Bach</i> ²	Structured sparsity and convex optimization (2/2)
15h30-16h15	Open discussion 2	<i>Lead by R. Gribonval & F. Bach</i>	Bridging the gap between sparse methods and machine learning
16h15-16h20	Conclusion and farewell words	<i>Frédéric Bimbot</i>	

¹ INRIA-Rennes / IRISA

² INRIA-Rocquencourt / ENS

³ EPFL (CH)

⁴ Politecnico Torino (I)

⁵ INRIA-Saclay / CEA